SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **172 Standard Weld Metal**

Product Description: Gray / silver granular metal

Intended Use: Welding metal

COMPANY IDENTIFICATION

Supplier: **BURNDY LLC**
47 East Industrial Park Drive
Manchester, NH 03109 USA

24 Hour Emergency (INFOTRAC) (800) 535-5053 *(US and*
(352) 323-3500 *(International)*
Burndy Informational Number (603) 647-5000

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION

Health	Environmental	Physical
• Acute Toxicity - Oral, Category 4 • Skin Irritation - Category 3 • Eye Irritation - Category 2B • Specific Organ Toxicity – Single Exposure – Category 3	• Acute toxicity - Category 1	-

LABELLING

Symbols:

Warning

Environmental Hazard

Signal Word: Warning

Hazard Statements	*Precautionary Statements*
• H 302: Harmful if swallowed • H 411: Toxic to aquatic life and may cause long lasting harmful effects • H 320: Causes eye irritation • H 316: Causes mild skin irritation • H 335 May cause respiratory irritation	• P 261: Avoid breathing dust/fume/gas/mist/vapors/spray • P 264: Wash hands thoroughly after handling • P 280: Wear protective gloves/clothing • P 270: Do not eat, drink or smoke when using this product • P 271: Use only outdoors or in a well-ventilated area • P301 + P312: If swallowed: Call a POISON CENTER/doctor/etc if you feel unwell • P304 + P340: If inhaled: Remove person to fresh air and keep comfortable for breathing • P332 + 313: If skin irritation occurs: Get medical advice/attention

	• P330 Rinse Mouth • P305 + P351 + P338: If in eyes: Rinse • cautiously with water for several minutes. • Remove contact lenses, if present. Continue rinsing • P337 + P313: If eye irritation persists: Get medical advice/attention. • P403 + P233: Store in a well-ventilated place. Keep container tightly closed. • P405: Store locked up • P391: Collect spillage • P501: Dispose of contents in accordance with local/regional • regulations. Container doesn't require special disposal. • P273: Avoid release to the environment

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	Common Name/Synonym	CAS #	Percentage*	Impurities
Cuprous oxide	Copper Oxide, Cu_2o, Cuprite	1317-39-1	70-90	<10% Cupric Oxide <1% Copper
Aluminum Copper Alloy 50 Copper 50 Aluminum	-	7440-50-8 7429-90-5	15-25	None Known
Flourspar	-	Mixture	0-5	None Known
Tin	-	7440-31-5	0-5	None Known
Calcium Silicon	-	Mixture	0-5	None Known
Lithium Fluoride	-	7789-24-4	0-5	None Known

* 0-15% material composition inclusive of inert and non-hazardous filler withheld as trade secret in accordance with paragraph 1910.1200(i)(1). All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume. The exposure limits of this product, when allowed to enter the environment as dust particulate, are covered under the rules of 29 CFR 1910.1000, Table Z -3, "All inert or nuisance dusts, whether mineral, inorganic or organic."

SECTION 4 FIRST AID MEASURES

ROUTES OF ENTRY: Ingestion, Contact

EMERGENCY AND FIRST AID PROCEDURES:

Inhalation: Breathing airborne particles or dust may cause irritation to respiratory tract. Remove affected person to fresh air; if symptoms persist seek medical attention

Eye Contact: Direct contact can cause eye irritation. Remove contact lenses. Flush eyes with clear running water for 15 minutes while holding eyelids open; if irritation persists, seek medical attention

Skin Contact: Prolonged contact may lead to contact denmatitis. Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

Ingestion: May cause gastric distress, stomach pains, vomiting and diarrhea. Give two glasses of water for dilution; induce vomiting as directed by medical personnel; never give anything by mouth to an unconscious person; seek medical attention

SECTION 5 FIRE FIGHTING MEASURES

GENERAL HAZARDS

The materials are not explosive; ignition temperatures are in excess of 850°F (454°C) for starting material and 1750° F (954°C) for base material. They are not shock sensitive, nor are they subject to spontaneous ignition. Should the material be accidentally ignited, the immediate and direct application of large volumes of water will effectively retard the spread of fire and control it. Large amounts of dense, dusty smoke will be liberated during an accidental fire. Smoke, oxides of carbon; fumes of copper and aluminum, small amounts of fluoride fume or hydrofluoric acid fume may be released under ignition.

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use carbon dioxide, water, water fog, dry chemical, chemical foam, dry sand.

Inappropriate Extinguishing Media: None known

FIRE FIGHTING PROCEDURES

Fire Fighting Instructions: Firefighters must wear full face piece self- contained breathing apparatus in positive pressure mode. Water may be used from a distance once reaction is complete. Molten metal contact with water can produce pockets of superheated steam.

Unusual Fire Hazards / Combustion Products: BURNDY Weld copper base welding/joining materials are exothermic mixtures, which when reacted, produce hot molten materials with temperatures in excess of 4000° F (2204° C) and a localized release of smoke.

SECTION 6 ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Confine and segregate product for reuse; place material into approved containers for disposal; for spills in excess of allowable limits (RQ) notify the National Response Center (800) 424 - 8802; refer to CERCLA 40 CFR 302 for detailed instructions; refer to SARA Title Ill, Section 313, 40 CFR 372 for reporting requirements. Do not discharge into lakes, ponds, streams or public waters.

ENVIRONMENTAL PRECAUTIONS:

Copper and Aluminum can be serious marine pollutants. Prevent entry into waterways, sewer, basements or confined areas. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. The National Response Center can be reached at (800) 424-8802; refer to CERCLA 40 CFR 302 for detailed instructions; refer to SARA Title Ill, Section 313, 40 CFR 372 for reporting requirements.

CLEAN UP AND CONTAINMENT METHODS:

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do it without putting yourself in harm's way. All equipment used when handling the product must be grounded. Avoid breathing vapors/fumes/dusts and wear specific protective equipment specified in section 8. Use clean non-sparking tools to collect material and segregate material for reuse. If material cannot be reused place material in appropriate disposal container.

Spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted.

Note: Local regulations may prescribe or limit action to be taken.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Storage of BURNDYWeld Exothermic materials should be in a clean dry area and restricted to access by authorized personnel only.

Do not subject to rough handling or physical damage, nor excessive vibration. Store in accordance with "This Side Up" labels. Protect from weather and moisture. DO NOT USE PRODUCTS THAT HAVE BEEN

EXPOSED TO MOISTURE. Read and understand the instruction sheet packaged with the mold, and observe all general and safety instructions. Keep away from children. Do not tamper with valve. Keep away from ignition sources prior to use. Do not spray in eye, inhale vapors, or ingest. Use product in only well ventilated areas. Improper use can lead to exposure of molten metal and reaction by-products.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Component name	CAS #	OSHA PEL	NIOSH REL	ACGIH
Cuprous Oxide	7440-50-8	0.1 mg/m^3 TWA (Fume) 1 mg/m^3 TWA (Dust)	0.1 mg/m^3 TWA (Fume) 1 mg/m^{3}TWA (Dust)	0.2 mg/m^3 TWA (Fume) 1 mg/m^{3}TWA (Dust)
Cupric Oxide	1317-38-0	5 mg/m^3 TWA (Fume) 15 mg/m^3 TWA (Total Dust)	5 mg/m^3 TWA (Fume) 10 mg/m^3 TWA (Total Dust)	Not Established
Aluminum	7429-90-5	15 mg/m^3 TWA (Total Dust)	10 mg/m^3 TWA (Total Dust) 5 mg/m^3 TWA (Welding Fumes)	10 mg/m^3 TWA
Calcium fluoride	7789-75-5	Not Established	Not Established	Not established
Tin	7440-31-5	2 mg/m^3 TWA	2 mg/m^3 TWA	2 mg/m^3 TWA
Calcium Silicon	Mixture	Not established	Not established	Not established
Lithium Fluoride	7789-24-4	Not established	Not established	Not established
Flouride as F	-	2.5 mg/m^3 TWA	2.5 mg/m^3 TWA	2.5 mg/m^3 TWA

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: NIOSH approved respirator designed to remove airborne particulate present in excess of maximum allowable concentrations due to secondary operations such as mixing, spraying, sanding, buffing, etc. Refer to 29 CFR 1910.134 or European Standard EN 149 for regulations

Hand Protection: Neoprene or rubber gloves may be used when handling product.

Eye Protection: Protective eyeglasses or chemical safety goggles. Refer to 29 CFR 1910.133 or European Standard EN166

Other protective clothing or equipment: Safety eyebath nearby.
Work or Hygienic Practices: Practice safe workplace habits. Minimize body contact with this, as well as all chemicals in general.

SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

GENERAL INFORMATION

Physical State: Solid
Color: Gray/ Silver

Odor:	Characteristic odor
Odor Threshold:	Not Available

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Appearance:	Gray/ Silver granules
pH:	Not Applicable
Viscosity:	Not Applicable
Freezing Point:	Not Available
Boiling Point:	Not Applicable
Flash Point:	Not Applicable
Evaporation Rate:	Not Applicable
Lower Flammability Limit:	Not Applicable
Upper Flammability Limit:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density (Air=1):	Not Applicable
Specific Gravity (Water = 1):	Approximately 6.0
Solubility in Water:	Insoluble
Coefficient of Water/Oil Distribution:	Not Available
Auto-ignition Temperature:	> 1750 °F (> 955 °C)
Percent Volatile, wt. %:	Not Available
VOC content, wt. %:	Not Available

SECTION 10 STABILITY AND REACTIVITY

STABILITY:	Product is stable under normal storage conditions.
CONDITIONS TO AVOID:	Avoid generating airborne dust, avoid moisture.
INCOMPATIBLE MATERIALS:	Strong oxidizers, strong acids

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition will not occur if handled and stored properly. In case of fire, smoke, oxides of carbon, fumes of copper and aluminum, and small amounts of fluoride fume or hydrofluoric acid fume may be released under ignition.

POSSIBILITY OF HAZARDOUS REACTIONS: HAZARDOUS POLYMERIZATION will not occur

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY VALUES

Ingredient	LD_{50} of ingredient (Specify species and Route)	Sources
Cuprous Oxide	LD_{50}: 470 mg/kg Oral-Rat LC_{50}: 5 mg/m^3/24H Inhalation - Rat	RTECS, EPA HSNO CCID
Cupric Oxide	LD_{50}: 470 mg/kg Oral-Rat LC_{50}: Not Established	RTECS
Aluminum (Fume or Dust)	LC_{50}: Not Established LD_{50}: Not Established	-
Calcium Fluoride	LD_{50}: Not Established LC_{50}: Not Established	-
Tin	LD_{50}: Not Established LC_{50}: Not Established	Insufficient data
Iron Oxide, Black	LD_{50}: Not Established LC_{50}: Not Established	Insufficient data
Calcium Silicon	LD_{50}: Not Established LC_{50}: Not Established	Insufficient data
Lithium Fluoride	LD_{50}: 608 mg/kg Oral - Rat LC_{50}: Not established	RTECS

ACUTE EFFECTS

Eye Contact:	Direct contact with eyes may cause irritation.
Skin Contact:	None expected, however, prolonged contact may cause irritation.

Inhalation: Breathing airborne particles or dust from mixing, spraying, sanding, grinding, etc. may cause irritation to respiratory tract. Contains substances which are considered nuisance dusts which require a NIOSH approved respirator when airborne particulate exceeds maximum allowable limit.

Ingestion: May cause gastric distress, stomach pains, vomiting and diarrhea.

Additional Target Organ Effects: Renal and hepatic toxicity.

Carcinogenicity:	**IARC:**	NO
	ACGIH:	NO
	NTP:	NO
	OSHA Regulated:	NO

CHRONIC/OTHER EFFECTS:
Product is an eye, skin and respiratory irritant. Products containing tin can cause allergic contact dermatitis. Acute copper poisoning after ingestion can cause liver injury, methemoglobinemia and hemolytic anemia. Acute renal failure may result, secondary to massive hemoglobinuria. Iron Oxide fumes can cause metal fume fever and prolong inhalation can cause damage to the liver and kidneys.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY:

Ingredient	**LC_{50} and Species**
Cuprous Oxide	75 µg/L/96 hr Zebra Danio Fish 173 µg/L/96 hr Sheepshead Minnow
Aluminum Copper Alloy	Not Available
Tin	Not Available
Calcium Silicon	Not Available
Calcium Fluoride	Not Available
Lithium Fluoride	Not Available

There is limited data regarding the mobility, degradability and potential for bio concentration in aquatic species for the ingredients of this product. Evidence suggests that copper does not have significant mobility in soil unless under acidic conditions. Copper and copper oxides can be highly toxic to aquatic species. Aluminum contamination can be toxic to aquatic species. Industrial products should not be discharged to sewers or other water sources to prevent the risks of long term adverse effects and environmental contamination.

SECTION 13 DISPOSAL CONSIDERATIONS

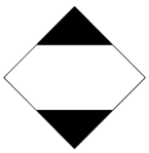
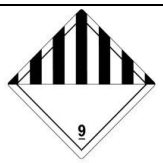
Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable Local, State and Federal laws and regulations, and material characteristics at time of disposal.

WASTE DISPOSAL METHOD:
Avoid discharge into natural waters. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic and plant life; and conformance with environmental and public health regulations.
According to the European Waste Catalogue, waste codes are application specific and should be assigned by the user based on the application for which the product is used. Dispose of in accordance with Local, State, and Federal Regulations. Do not flush to sanitary sewer or waterway. Refer to "40 CFR Protection of Environment Parts 260 - 299" for complete waste disposal regulations. US EPA guidelines for the classification determination are listed in 40 CFR parts 261.3. Consult your local, state, or Federal Environmental Protection Agency before disposing of any chemicals to ensure compete and accurate classification.

SECTION 14 TRANSPORTATION

GUIDANCE TO NON-BULK PACKAGING:
Due to the limited quantities of hazardous material per package all BURNDYWeld Exothermic materials are shipped in non-bulk packaging under provisions outlined in 49 CFR 171.4 "Marine Pollutants" and the exception 49 CFR 171.4(c)(2).

GUIDANCE TO BULK PACKAGING:

Regulatory Information	UN Number	Proper Shipping Name	Hazard Class	Packing Group	Label (s)	Environmental Hazards
US DOT	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		Severe marine pollutant
TDG	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		May be offered as a Limited Quantity (See TDG Schedule 1)
ADR	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		May be offered as a Limited Quantity (See ADR Table A)
IATA	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		May be offered as a Limited Quantity (See IATA PI Y911)
IMDG	UN3077	Environmentally hazardous substance, solid, n.o.s. (Copper)	9	III		Severe marine pollutant

SECTION 15 REGULATORY INFORMATION

TSCA (USA - Toxic Substance Control Act):

All components of this product are listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory) or are exempted from listing because a Low Volume Exemption has been granted in accordance with 40 CFR 723.50.

EPCRA: This material contains no extremely hazardous substances.

SARA (3111312) REPORTABLE HAZARD CATEGORIES:	Yes -Immediate Health
SARA (313) TOXIC RELEASE INVENTORY:	7429-90-5 Aluminum (Fume or Dust)
	N100 Copper Compounds

CERCLA (USA- Comprehensive Response Compensation and Liability Act):

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) has notification requirements for releases or spills to the environment (ingredient: copper) of the Reportable Quantity (RQ for this mixture> 24000 lbs) or greater amounts, if< 41µ diameter, according to 40 CFR 302.

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986:

There are no chemicals present known to the state of California to cause cancer or reproductive toxicity.

CPR (Canadian Controlled Products Regulations):

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification: Not controlled

IDL (Canadian Ingredient Disclosure List):

Components of this product identified by CAS number and listed on the Canadian Ingredient Disclosure List are shown in Section 2.

DSL/NDSL (Canadian Domestic Substances List I Non-Domestic Substances List):

Components of this product identified by CAS number are listed on the DSL or NDSL, or are otherwise in compliance with the New Substances Notification (NSN) regulations. Only ingredients classified as "hazardous" are listed in Section 2 unless otherwise indicated.

EINECS (European Inventory of Existing Commercial Chemical Substances):

Components of this product identified by CAS numbers are on the European Inventory of Existing Commercial Chemical Substances.

WGK Water Quality Rating: 1 VbK Index:

EU RISK (R) AND SAFETY (S) PHRASES:

R11:	Highly flammable
R 15:	Contact with water liberates extremely flammable gases
R 17:	Spontaneously flammable in air
R 20/22:	Harmful by inhalation and if swallowed
R 36/37/38:	Irritating to the eyes, respiratory system and skin
S 22:	Do not breathe the dust.
S36/37/39:	Wear suitable protective clothing, gloves and eye/face protection.

SECTION 16 OTHER INFORMATION

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS) RATINGS:

Health - 1 Flammability - 0 Physical Hazard - 0 PPE - E

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Date	Description	Sections Affected
2/13/08	Rev 1	
6/2/11	Rev 2	Sec 11, Transportation
8/1/11	Rev 3	All
11/6/12	Rev 4	Sections 2, 3, 4, 5, 6, 7, 9, 10, 11 & 15
3/19/13	Rev 5	Sec 11
9/16/14	Rev 6	2-16
10/30/14	Rev 7	-
10/19/15	Rev C	All
10/04/17	Rev D	All

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